PR-SUKUNKA 72(1) B

SUKUNKA PROJECT

COALITION MINING NOVEMBER 1972

PR-SUKUNKA 72(1)A

November 14th, 1972

A CONFIDENTIAL

SUMMARY OF

THE SUKUNKA PROJECT

PREPARED FOR THE

GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

BY

COALITION MINING LIMITED

1. GENERAL DESCRIPTION

The Sukunka Project provides for the development of a deposit of coking coal located 38 miles south of Chetwynd, British Columbia, in the Peace River district.

The total project will involve the development of several underground mines, the construction of a preparation plant and associated site facilities, the construction of a rail link by the British Columbia Railway from the mine site to connect with the main line of the British Columbia Railway at Chetwynd, plus other supporting services.

Power will be supplied by the British Columbia Hydro through the construction (at the mine owners' expense) of an overhead line to supply the power for all operations at the mine site.

A natural gas line is also planned by the owners to connect the mine site area to Chetwynd.

The present logging road will need to be upgraded to Provincial Highways standards to provide efficient access.

2. <u>COAL RESERVES</u>

The total area is covered by 41 licences (41 square miles) granted by the B. C. Government. Of this total area, approximately 7.2 square miles have so far been subject to detailed geological exploration. The total of measured, indicated and inferred reserves in the explored area has been fixed at 90 to 95 million long tons. It has been conservatively estimated that these reserves will yield 57 million long tons which can be shipped as finished product. Assuming that the project proceeds, geological exploration will continue in order to extend the reserves within the present licence area. In addition, there are indications of adjacent small areas of coal which could be mined economically after the basic infrastructure is provided and development takes place in the Sukunka Valley.

3. PRODUCTION

The production from the mine is planned at a rate of 2 million long tons by the end of 1974. The mining technology provides for the use of continuous mining machines in a modified room-and-pillar mining method. Access to the coal seam will be via adits in the side of the hill at an altitude of 4,000 feet. An enclosed decline conveyor will transport the coal to the preparation plant located on the valley floor at the 2,500 foot level.

4. EMPLOYMENT

Present indications are that between 550 and 600 new all-season jobs will be created at the mine site. Two hundred new jobs will be created in the British Columbia Railway system, and another 90 jobs at the loading port. Employees required by suppliers of material and services will number 710. These figures were determined in two separate studies commissioned by the project operators and the British Columbia Railway.

total 1550.
of which 840 permanent.

It is our anticipation that the main body of employees will be recruited in sequence from the following areas:

a) the immediate area of Chetwynd.

b) The broad area of Dawson Creek, Fort St. John, and the Peace River in general. This could extend as far as Prince George.

c) The remainder of British Columbia

d) The Prairie region of Western Canada.

The B. C. Government requirement for statutory qualification will require that the supervision, particularly for underground operations, be recruited from other coal mining areas in the world. In this regard clear preference is for recruitement of young, high calibre supervisors who have been trained under regulations similar to those in British Columbia. In specific terms, recruitment of supervisory personnel will take place in the U.K., Australia and the remainder of Canada.

We are conducting a development mining programme in order to define more accurately the year-round mining conditions we can expect to encounter in the main operations. This decision was made with full recognition of the difficulties we face in recruiting people with experience in the operation of such equipment.

For this reason we imported a team of experienced mining personnel from Australia to be used as a nucleus for training local people. During the past six weeks we have succeeded in matching our original team with B.C. employees and are providing orientation training to the mining conditions and the operation of the equipment.

Our objective is to recruit a mature group of employees, preferably married and with families, and to train them in the use of continuous mining machines and in coal preparation techniques in order that a high-quality finished product can be shipped to world markets.

A fully staffed headquarters for the project is maintained in Vancouver.

5. CAPITAL COSTS

The total new investment in B.C. is estimated at $100 million including the direct facilities and services required. More than $6 million have been expended to date in evaluation and initial development of the property.

6. TRANSPORTATION

It is planned that this be provided by the British Columbia Railway which will transport covered loaded trains from the mine site to Chetwynd along the newly constructed rail link, and thence to Squamish, a distance of approximately 650 miles. A contract has been negotiated with the British Columbia Railway which includes a realistic freight rate and provision for the project to guarantee debts undertaken by the British Columbia Railway for the construction of the rail spur and the acquisition of certain equipment.

BC Rail $78 MM total

7. SHIPLOADING

This matter is still being discussed at various levels of Government and with particular reference to ecological influences. The decision to support the recommendation of the British Columbia Railway to locate the shiploader at Squamish, was done with full recognition of the relationship between the alleged negative effect on the ecology and the positive effects on the economy. The estimated revenue to the B.C.R. from the Sukunka operation will be in excess of $10 million per year and, we understand, may be more than 35% of current total freight volume, thus providing a considerable increase in the utilization of the assets already in place. 25%?

8. MARKETING

It has been the policy of Coalition Mining to seek the greatest diversity of markets possible for the product in order to provide protection of the employees and investors against economic recessions in any particular region of the world. Considerable efforts have been made to develop markets in Japan and Europe as well as South America in order to provide this level of diversity and greater security. In this regard, it is recognized that price policies for European customers will need to reflect the higher transportation costs as compared with the Japanese market. Notwithstanding the lower prices to Europe, it is felt that it is in the best interest of the economy of British Columbia to persist with a marketing strategy which diversifies the destination on a world-wide basis.

Not lower than Kaiser or [illegible]

In the pursuit of markets in Europe we have been encouraged by the reaction of senior management personnel from the major steel companies in the United Kingdom, France, Germany, Italy, Belgium, Holland and Spain who recently visited the mine site. This is the first time in known history that such a visit has been made to any single mine project and is clear evidence of their desire to broaden their trading activities. For most of them it was their first visit to British Columbia and they report now an entirely new appreciation of the Province and its resources. They were particularly impressed with the economic significance of the British Columbia Railway and the port complex of Vancouver.

9. COKING COAL MARKET

During the next ten years, the world coking coal market is expected to face a serious problem of supply of high quality material. The product shipped from the Sukunka mine will, after washing and drying, be a finished product of very high quality ideal for blending with lesser quality indigenous coals, to make a suitable coke for use in blast furnaces. It is expected that the Sukunka coal will constitute between 15% to 20% of the coal used in any particular blend.

The past availability of suitable coking coal in most world markets has tended to de-emphasize research into a substitute for coking coal. The growing world shortage, has promoted major steel producers to intensify their efforts to find a substitute and it can be anticipated. ? that these efforts will be successful, probably within the lifetime of the mine. This means in effect that there is a time limitation as far as a market for coking coal of Sukunka quality is concerned.

Misleading?

10. PROTECTION OF THE ECOLOGY

Steps have been taken in the development, and will continue to be taken, in order to provide maximum protection for the ecology. The pertinent laws have been reviewed and are compatible with effective operation of the mine, the preparation, transportation, storage and loading procedures. To provide the greatest protection for the ecology and to eliminate waste in transit, the operators have specified covered railcars for the haul from the mine site to the sea port.

Water used in the coal washing plant will be pumped into settling ponds or tanks and only monitored water discharge will be permitted.

Unsightly waste heaps will not be allowed to develop since refuse from the preparation plant will be placed in areas according to pre-determined specifications designed to prevent spontaneous combustion and to permit reforestation. The entire programme will meet the requirements of relevant Government Departments.

At the ship loading facility, the coal will be handled by enclosed dust-controlled conveyors and the storage area will be designed to effect the maximum control of düst flight. It must be recognized that our studies on the alternative sites in the Port of Squamish will have to take into account the changed wind factors.

11. HOUSING

A number of alternative proposals are still being considered concerning housing the employees. The key alternatives, according to studies done by Woods, Gordon and Company, concern the development of Chetwynd versus the establishment of a new community nearer to the site. It is believed that the social amenities offered in Chetwynd need to be given careful consideration as they relate to the "quality of life" in such a community which is already developed, as compared with establishing an entirely new community. However, the distance of Chetwynd from the mining operation is recognized as being over the acceptable travel limit unless a first class highway is established. The other disadvantages of creating a new community go beyond the provision of amenities and mainly focus on the negative aspects of the "company town". Another factor is the desire of the operator to establish a centre where significant additional industrial and commercial development can take place and where adequate social objectives may be accomplished outside the economic life of the miner.

The injection of 600 wage-secure families into the social, commercial and industrial life of the Chetwynd area will provide a stability to the community which is now so dependent upon three highly seasonal activities, forestry, agriculture and tourism.

Chetwynd can look forward to a prosperity unequalled in smaller B.C. towns and villages, enjoying the benefits of four basic industries.

12. THE OWNERS

Under the terms of agreement the owners have formed a joint venture to finance and operate the project.

The members of the joint venture are:

Brameda Resources Limited of Vancouver	- 40%
Coalition Mining Limited of Vancouver	- $7\frac{1}{2}$%
Mikas Oil Co. Ltd. of Calgary	- $52\frac{1}{2}$%

Brameda Resources discovered the coal deposit at Sukunka and undertook the first geological exploration of the area. Brameda is a public company with shares traded in Vancouver and Toronto. Brameda recently became associated with the Teck Corporation of Vancouver.

Coalition Mining is a company formed to bring worldwide expertise in coal mining to the operations in the Sukunka Valley. Coalition shares are owned by:

- Austen and Butta Limited of Sydney, Australia, coal mine operators in New South Wales.
- Intercontinental Fuels Limited of London, England, specialists in marketing and distribution of coal in worldwide markets and partly owned by the National Coal Board of Britain.
- Mikas Oil Co. Ltd. of Calgary, Alberta.

Mikas Oil is a wholly-owned subsidiary of Brascan Limited, a Canadian investment management company. Mikas is actively engaged in oil exploration and production, and is participating to the extent of $40 million in oil and gas exploration in co-operation with Elf Exploration and Development Canada Ltd. over a vast area in Canada's Northern Frontier sedimentary basins. Brascan's principal subsidiary is Light S.A. which is engaged in generating and distributing electrical energy in Brazil.

<u>The total Canadian ownership in the Sukunka project is</u> 95% with the remainder shared between the Australian and U.K. interests.

13. THE TECHNICAL EXPERTISE

In view of the experience in coal operations in Western Canada, Coalition management has gathered together a wide range of expertise from the principal mining areas of the world. For example, the two principal advisors to the project are:

Henry Collins, C.B.E., M.Eng., F.I.Min.E., M.I.E.E.,
Chartered Engineer.

Neil Robinson of Charleston, West Virginia.

Henry Collins:

Formerly a member of the National Coal Board in the U.K. responsible for coal production and other activities, Mr. Collins has held various senior managerial posts in the British coal industry, including that of Director General of Reconstruction in the National Coal Board.

In the period 1945-50 he was British Chairman of the combined coal control group in Germany responsible for directing the rebuilding of the West German coal industry as well as the current coal production and distribution until the takeover by the German Government.

From 1950 onwards in the U.K., Mr. Collins has been a member of the Ministry of Power Advisory Council on research and development in the fuel industries, of the mining qualifications board; the safety in mines research advisory board, and the geological survey of Great Britain advisory boars; Chairman of the National Coal Board; opencast mining executive and of the Brickworks executive. He is a Fellow and Past President of the Institution of Mining Engineers; Member of the American Institution of Mining Engineers; Vice President of the World Mining Congress; Member of the British Executive Committee of the world energy conference; Director of companies associated with the coal industry and other interests. Mr. Collins has travelled widely and has had assignments in coal producing countries in the five continents.

Neil Robinson:

Mr. Robinson is a Senior Consultant to major oil companies, the U.S. Engineering Fraternity and the principal utility companies in the United States, as well as advisor on coal matters to the U.S. Government. Through his extensive contacts in the industry Mr. Robinson is able to bring the most respected expertise available in North America to the planning and development phases of the project. Mr. Robinson has acted as special advisor and validated the project to the Brascan Board.

In conducting the engineering and feasibility studies associated with the project, Coalition has employed the major engineering companies in the various fields.

The geological programme, conducted by Dr. C. McElroy of Sydney, Australia, and validated by the Robinson Company under the leadership of Doctor Smith, the chief geologist for the State of Illinois, has been described as the most extensive programme ever conducted within the knowledge of Coalition's advisors.

Some indicators of the economic impact on the Province of British Columbia.

Content:

Item	
1	Investment
2	Annual Expenditures
3	Increased Tax Revenues
4	Employment
5	Return on Assets
6	Debt Repayment
7	Effect of increased Royalty Payments

SUKUNKA PROJECT

Summary of the economic impact to British Columbia.

1. INVESTMENT IN BRITISH COLUMBIA

Total capital resources and commitments of $116 million are necessary for the Sukunka mine process and its ancillary facilities in the period 1972 through 1975, as follows :

$80 million invested direct by owners

$40/annual long ton - seems high (no breakdown)

$36 million guaranteed by owners for facilities provided by others.

$116 million invested in British Columbia.

A large percentage of the total expenditures will be made in the Province, with direct benefit to suppliers and the business climate in general, and with significant increases in tax revenues.

2. ANNUAL IMPACT ON BRITISH COLUMBIA ECONOMY

Anticipated annual contributions to the Provincial economy during full production (by 1976) are represented by the following expenditures :

	Directly in B.C.	Other Jurisdictions
	-------$ millions-------	
B.C. Railway	10.0	-
Wages and Salaries	7.5	-
Materials and Services	5.6	0.6
Ship loading	2.6	-
Other operating items	0.7	-
Interest, fees and other items	-	4.7 What then Bank Costs?
Total cash outlays	26.4	5.3
Amortization of development and facilities	3.4	-
Annual expenditures	29.8	5.3

These estimates are at "1972 dollars".

Of the total annual expenditures of $35.1 million, almost $30 million will be spent in B.C. Of this, at least $10 million willbe paid to the B.C.R.

3. NEW JOBS CREATED IN B.C.

600	Directly employed at mine site (550-600)
200	B.C. Railway employees
90	Employees at Ship Loading Terminal
890	
710	Employees of suppliers of materials and services
1,600	Total direct new jobs

Source: Estimates in study for B.C.R.

The build up in jobs will start in the summer of 1973 during the construction period and reach 500 to 600 within a few months. Thereafter there will be constant increase as more permanent all season jobs are created. The peak of direct jobs will be reached in 1975.

Economists have estimated that nother 1,100 jobs will develop to service the direct jobs to bring the total increment to 2,700 jobs within the next four years.

4. INCREASED TAX REVENUES TO BRITISH COLUMBIA

The following three year progression denotes Sukunka's direct tax contribution to the Province, expressed in monetary terms and in terms of annual tonnages : 2.24 MM short tons/yr.

	--------$ millions--------			
Annually to British Columbia	1976	1979	1982	1985
Royalties	0.56	0.5	0.5	0.5
Mining Tax		1.4	1.3	1.5
Income Tax (BC share Fed. Corp. tax)			0.6	1.2
Direct Taxes ($MM.)	0.5	1.9	2.4	3.2
Per ton produced (cents) (per long ton)	.25 (.28)	.93	1.20	1.61

Estimates

Property taxes	-	$200,000
Employees Income Tax	-	$1,100,000
Provincial Sales Tax	-	$250,000
Total		$1,550,000 equals 77¢ per ton

1.61
.77
2.38

This calculation assumes that the present tax regulations and royalties are maintained. The total tax revenue excluding the B.C.R. revenues will be ~~$2.48~~ 2.38 per ton, (1985) or $7.48 per ton including the B.C.R.
($7.15?)

4.77?
1.61
.77
7.15

? 3.2 .45 3.65?

The total revnues to B.C. will be $4.9 million per year without B.C.R. and $14.9 million including the B.C.R.

5. PROJECTED RETURN ON ASSETS AND RESOURCES COMMITTED

The following table projects returns to the owners at five year intervals.

The total assets of the owners tend to diminish during the period. One factor is that the guarantee of capital for the railway is paid off and by 1985 the owners guarantee is reduced to zero. However, by this time the track and rolling stock will have retained value and be worth a considerable sum which will, by then, be included in the assets of the B.C.R. but at no cost or risk to B.C. during the 20 year period.

guarantee = $28 MM. on 10 yrs. amortized?

The net returns after tax to the owners is shown :

Commitments are contingent liabilities (guarantees)

Year		Total Assets and Commitments		Net Return After Tax*		Percent Return	Ret on the "hard" capital
		---------------$ millions---------------					
1975	$ 80 MM	116		2.9	diff interest?	2.5	3.6%
1980	80 MM	106	reduced $20 MM. is this depreciation? (what about BC Rail guarantee?)	4.9		4.6	
1985		96		4.6		4.8	
1990		86		4.3		5.0	
1995							

* Net return is based upon existing B.C. royalty and mining tax legislation together with eligible Federal Taxes.

6. PROJECT ABILITY TO RECOVER CAPITAL INVESTMENT

The project's ability to recover invested capital is demonstrated by cumulative cash flows view every five years, as follows :

Year	Cumulative available cash before debt payment
1975	$ 7.9 million
1980	$ 50.1 million
1985	$ 84.2 million
1990	$116.1 million (15 yrs)

The cash amounts available to the owners after paying interest and taxes are indicated. These are the total cash amounts available to pay off debts undertaken to develop the project. It will take until 1990 to clear this amount of debt if all the available cash is used for this purpose.

7. EFFECT OF INCREASING ROYALTY PAYMENTS TO BRITISH COLUMBIA

This tabulation reflects the effect of increasing royalty payments from 25 cents per long ton to 50 cents per ton.

	Present Royalty		50 cents Royalty
	-----------$ millions-----------		
Net return after tax to owners.	$560,000 annually		($1,120,000 annually(?))
1975	2.9 (2.7?)		2.4 (2.1?) (2.3)
1980	4.9		5.0*
1985	4.6		4.9*
1990	4.3		3.9
Per cent return			
1975	2.5		2.1
1980	4.6	Per cent	4.7
1985	4.8		5.1
1990	5.0		4.6
Cash available for debt (cumulatives)			
1975	7.9		7.4
1980	50.1		47.7
1985	84.2		80.3
1990	116.1		110.9

* Increase due to tax deductions extending over longer period.

The long term effects of, for example, increasing the level of royalty from 25¢ to 50¢ per ton are to reduce the percentage return to the owners and to lengthen the period required to pay off the debt, thereby increasing the risk to the owners.

The feasibility of this venture has, until now, been considered only in terms of the royalty and tax factors as they are known today. A complete review of the project will be required by our Board if these factors change.

All of the above calculations are based on a selling price of $20.57 per long ton. This comparies to the following current prices for other coals F.O.B. Vancouver.

Fording	$ 18.50	per long ton	$13.85 US ?
Kaiser	$ 18.75 U.S.	per long ton	16.88 US ?
McIntyre	$ 18.72 U.S.	per long ton	check

COMMENT

RISK TO THE OWNERS

It will be appreciated that a final decision as to whether to go ahead with this project has not yet been made and is pending the availability of more definitive analyses of the degree of risk that needs to be undertaken.

As the foregoing numbers indicate and under the present regulations concerning royalties and tax, the owners are required to undertake commitments of $116 million for the levels of return indicated. However, these are not the only risks; for example, the price established has not yet been subject to contract. Although the prospects are good, there is no guarantee these prices will be obtained.

Mining, particularly underground mining, is not without its own risks and although a thoroughly professional job has been done in analizing the conditions, there are many potential problems that could seriously erode the returns available to the owner.

Obviously a reassessment of these risks is an essential next step in reaching a final decision as to whether or not the project should be developed.

Coalition Mining Limited is pleased to provide the Department of Mines and Petroleum Resources of the Government of British Columbia with a full set of the many volumes that comprise the confidential geological studies of the Sukunka Project. The survey, which represents many months of work and many thousands of dollars, will, we hope, be of considerable value to the Department.

Respectfully submitted,

C.E. Sawyer
Coalition Mining Limited